

Abstract

Timing information, such as stratum 1 traceable synchronization information, is transmitted in a high-bit-rate digital subscriber line (HDSL) transport frame by timing the transport frame using a corresponding timing reference signal. In an illustrative embodiment, a central office modem maps a DS1 payload at 1.544 Mbps into HDSL transport frames at 1.552 Mbps, using a DS1 timing reference signal generated by, e.g., a building integrated timing supply (BITS) having global positioning system (GPS) capability. The transport frame is transmitted by the central office modem to a customer premises modem which demaps the transport frames to recover the DS1 payload and the DS1 timing reference signal. The recovered timing reference signal is then delivered to an external timing input of a computer, set-top box or other customer premises equipment (CPE). Synchronization status messages (SSMs) may be included in the timing information transmitted between the central office and customer premises modems. The invention is applicable to DSL signals other than HDSL2, including, e.g., single-pair HDSL signals, multiple-pair HDSL signals, as well as other types of signals used in conjunction with the transport of information over existing wired connections.

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